

NOTE

Utilization of Tiger Beetle Larval Burrows by a Nest-provisioning Wasp,
Leucodynerus russatus (Bohart) (Hymenoptera: Eumenidae)

Little is known about the nesting behavior of *Leucodynerus*, a genus of six species recently treated in Bohart (1982. J. Kans. Entomol. Soc. 55: 442-446). He reported finding females of *Leucodynerus cockerelli* (Cameron) nesting in a road cut and provisioning their nests with small gelechiid larvae.

My observations were made in the Sulphur Springs Valley, just south of Willcox, Cochise County, Arizona. The habitat was a saltbush flat dominated by fourwing saltbush and tobosa grass. Adult wasps were observed on several occasions in the summers of 1982 and 1983 in and adjacent to a shallow drainage swale which temporarily held small puddles of water during the summer rainy season. Vegetation cover was sparse (10-15%) in this specific microhabitat. Soil was a very hard packed, saline, sandy clay loam. Along the edges of the swale the soil was more loosely packed and higher in sand content.

On two occasions in mid-July, 1982, I noticed an adult of *Leucodynerus russatus* enter a third instar larval burrow of *Cicindela lemniscata* LeConte from which an adult tiger beetle had previously emerged. Tiger beetles pupate in the larval burrow and exit through the burrow opening at the soil surface. The burrows of *C. lemniscata* (one of the smallest U.S. species) were 1.9-2.3 mm in diameter and 15-24 cm deep and an appropriate size for the wasp. I excavated each of these burrows and found only the old larval head capsule and pupal exuvia. On July 29, 1983, I noticed a dead or paralyzed larva of *C. lemniscata* adjacent to a marked burrow. An adult female *L. russatus* and 4 lepidopteran larvae were found in the burrow and collected for identification. The prey were 2 Psychidae, 1 Gelechiidae and 1 Gelechioidea, probably Cosmopterygidae. It seems likely that the tiger beetle larva was stung and removed from its burrow by the wasp since larvae rarely leave their burrows.

These observations confirm that *L. russatus* uses tiger beetle larval burrows for nesting. Since the burrows had been precisely marked it is certain that they were made by tiger beetle larvae and not dug by wasps. However, the actual frequency of this behavior is not known. An indication is suggested by the observation of 5-6 wasps entering or exiting from burrows in an area where 200-250 burrows were being regularly followed during July and August of 1983.

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